

# TAIYUAN CENTRAL HOSPITAL EYECARE INFORMATION SYSTEM

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## ABSTRACT

Taiyuan Central Hospital Eyecare Information System is the web system to record the patient's information and gives all the relevant medical care instructions. This system aims to keep the patient's records and store the following records in the database. The system wants to solve the current management problems: the paper-based registration systems leading to lost or overlooked cases. The system's primary role is to allow the user and hospital-related staff to register the patient to achieve the resulting print and get the eye care instruction. In the patient information tab, the system user can see and update the patient's detailed information. If the user wants a medical eye care plan, they can choose one plan and continue the payment. The patient can also check the doctors' results and view all the relevant drug information, which helps to understand better. Administrators can manage all the information in the database. Hospital staff can give relevant diagnosis results, and doctors can choose patients who are scheduled to consult. The system provides the doctor's list to check and related eye care plans clearly, which is convenient for patient treatment. The project aims to address the weaknesses of inadequate eye habits and inefficient patient information management in healthcare facilities. Its objective is to enhance information management in ophthalmology departments, improve doctor-patient communication, and increase patient awareness of their eye conditions. Overall, this system helps the staffs manage patient information more easily and quickly and make it easy for patients to use it online.

## 1 INTRODUCTION

Currently, eye care center and ophthalmology departments within central hospital are facing challenges with the existing patient information management systems. These systems often rely on manual processes and fragmented data, leading to inefficiencies and difficulties in delivering timely and accurate eye care services. Paper-based records and disjointed information can result in delays, errors, and challenges in accessing critical patient data. Considering these issues, the Centre Hospital EyeCare Information System has been developed as a crucial solution. This specialized digital platform, utilizing MySQL and HTML technologies, addresses the limitations of current practices by providing a comprehensive and integrated system for efficient patient information management, improved eye care services, and enhanced patient outcomes.

Taiyuan Centre Hospital EyeCare Information System is a comprehensive digital platform designed to streamline eye care services within hospitals and eye care centers. By centralizing patient information and eliminating paper-based records, the system enhances

patient information management. The system improves appointment scheduling, reducing conflicts and wait times for patients. Patient engagement is promoted through the provision of educational resources and clear instructions. Reporting and analytics capabilities support data-driven decision-making and quality improvement initiatives. Additional services include online chat, online booking, drug information, and tracking of medical treatment results. Overall, Taiyuan Centre Hospital EyeCare Information System optimizes eye care services, enhances patient outcomes, and improves operational efficiency in eye care centers.

## **2 PROBLEM STATEMENT**

Now in the review of some patients, there will be imperfect registration loopholes, and these problems will appear in the hospital system is not perfect. This information system aims to help the central hospital (Taiyuan Central Hospital), after learning that the rate of ophthalmic consultation has increased yearly in recent years, but the rate of disease information processing is low. Due to the increase in the number of visits, some emergency patients are not being treated correctly and ion time. Some patients are not properly registered in the information system and are not synchronized in the database. Finally, the doctor needs to keep the appointment registration manually in book, which leads to the slow treatment of patients, and the doctor needs more time to understand and search for patient information.

## **3 RESEARCH OBJECTIVE**

The objective of the Taiyuan Hospital Eyecare Information System can be summarized as follows:

- I. The system is developed with an online doctor-patient communication feature, enabling direct and convenient conversations between patients and doctors. This functionality enhances the patient experience by facilitating quick clarification of doubts, discussion of concerns, and timely guidance from healthcare professionals, all within the system.
- II. The system enables patients to access their medical information and drug results created by medical staff, fostering patient involvement and satisfaction.

III. The system develops a user-friendly interface with comprehensive drug information within the system. This empowers patients to make informed decisions about their medication usage, promoting adherence and patient safety.

## **4 RESEARCH METHOD**

The Agile Model has been chosen as the methodology for this project. Its iterative and feedback-driven approach allows for timely adjustments based on input from doctors and patients, ensuring the Taiyuan Central Hospital Eyecare Information System meets their specific requirements.

It offers a responsive and user-focused framework for developing an effective and adaptable eyecare information system for Taiyuan Central Hospital. It enables the project team to incorporate feedback, address evolving needs, and maintain a high level of quality and reliability in the system's development. Figure 1.1 shows the stages of an agile model.

### **4.1 PLANNING PHASE**

During the planning phase, we will conduct comprehensive project planning, including defining project objectives, scope, resource requirements, timeline, and risk assessment. The goal of this phase is to ensure a smooth project initiation and execution.

### **4.2 ANALYSIS PHASE**

In the analysis phase, we will conduct in-depth research and understanding of user requirements to identify the functional and non-functional requirements of the system. This will guide the design and implementation of the system in a clear direction.

### **4.3 DESIGN PHASE**

In the design phase, based on the results of requirement analysis, we will perform system architecture and interface design. Additionally, we will select appropriate technology frameworks, databases, and server environments.

#### **4.4 TESTING PHASE**

In the testing phase, the entire system will undergo comprehensive and in-depth testing, including unit testing, integration testing, system testing, and user acceptance testing, to ensure system stability and correctness.

#### **4.5 OPTIMIZATION AND DEPLOYMENT PHASE**

In the optimization and deployment phase, we will optimize the system's performance to enhance user experience. Subsequently, the system will be deployed to the production environment to ensure its security, stability, and availability.

### **5 RESEARCH OUTCOME**

The result of the project will be a completely new, fully functional information system. Through this system, patients can easily access their own medical information, realize online appointment, online communication, and inquire drug information functions. We expect that this website, built on the basis of information system, will provide Taiyuan Central Hospital with a convenient, efficient and reliable platform to meet the needs of patients and improve their medical experience. First, we have Figure 1, the user's page. Visitors do not need to log in or register to view the basic page. By clicking the main navigation bar patient button, the login and registration page will appear.

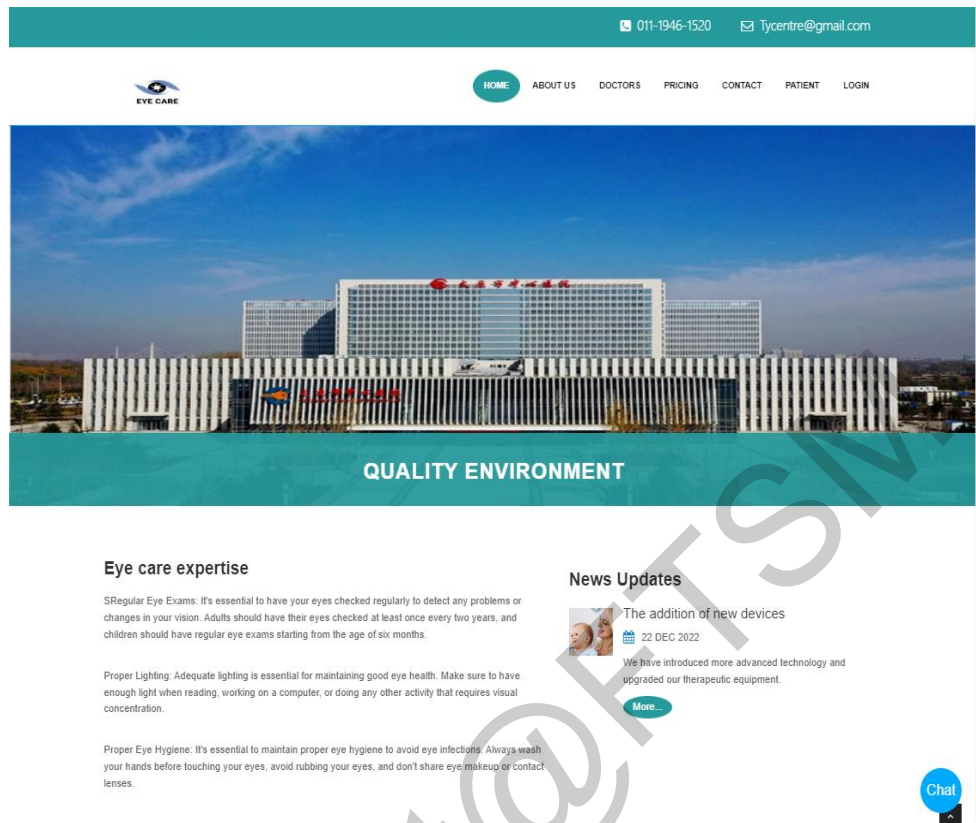


Figure 1 Homepage

When users need to register or log in, they can click on the button on the visitor's page to access the user login interface Figure 2, where they can enter their account credentials to log in.

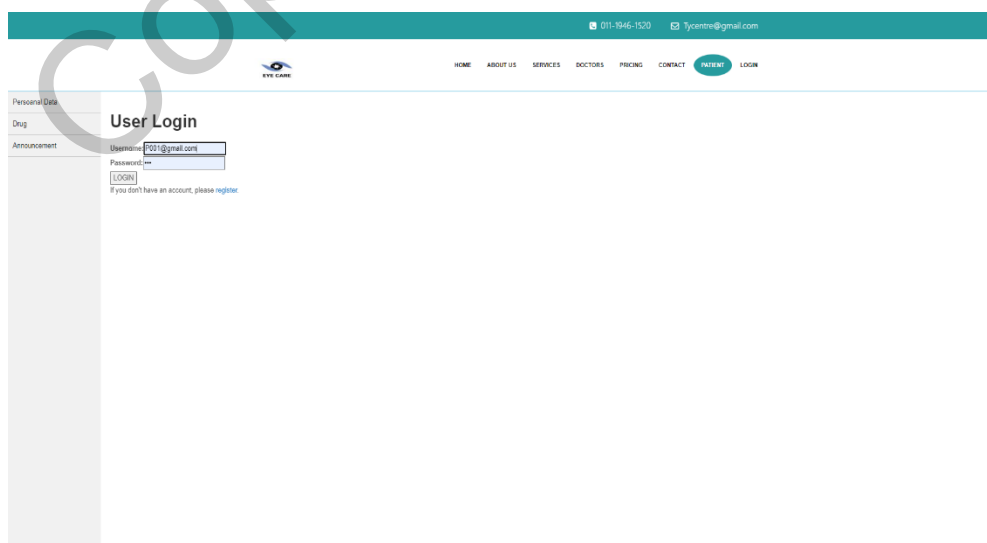


Figure 2 User Login Page

Figure 3 shows that users can complete the registration process by clicking on the "Register" button and filling out the required information

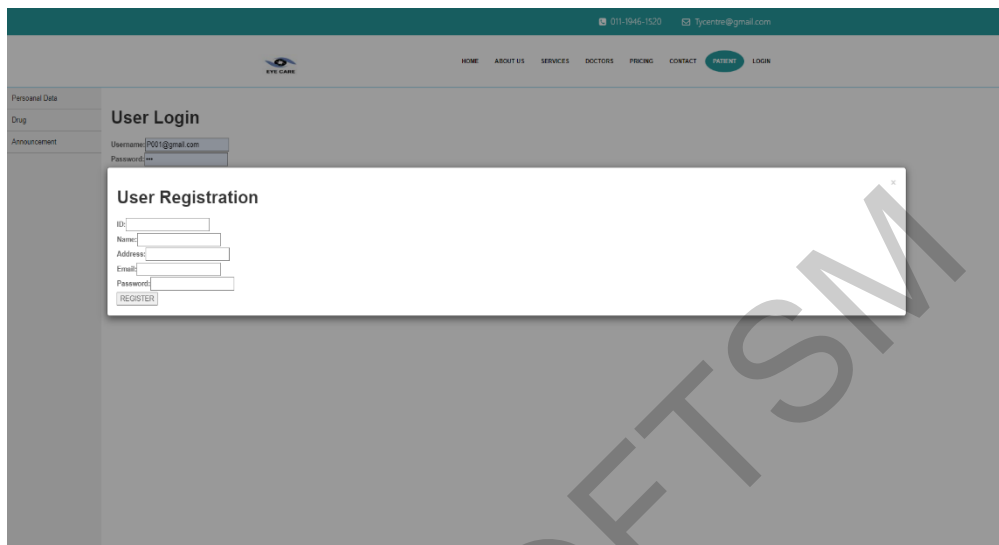
The screenshot shows a web browser window displaying the 'User Login' page of an 'EYE CARE' website. The page has a teal header with the phone number '011-1945-1520' and the email 'tycentro@gmail.com'. A navigation menu includes 'HOME', 'ABOUT US', 'SERVICES', 'DOCTORS', 'PRICING', 'CONTACT', 'PATIENT', and 'LOGIN'. On the left, there is a sidebar with 'Personal Data', 'Drug', and 'Announcement' sections. The main content area is titled 'User Login' and contains a 'User Registration' modal form. The form fields are: ID, Name, Address, Email, and Password, each with a corresponding input box. A 'REGISTER' button is located at the bottom of the form.

Figure 3 Register Page

After logging in, users can browse different functional sections by clicking on the left navigation bar. As shown in Figure 4, the page is displayed after logging in.

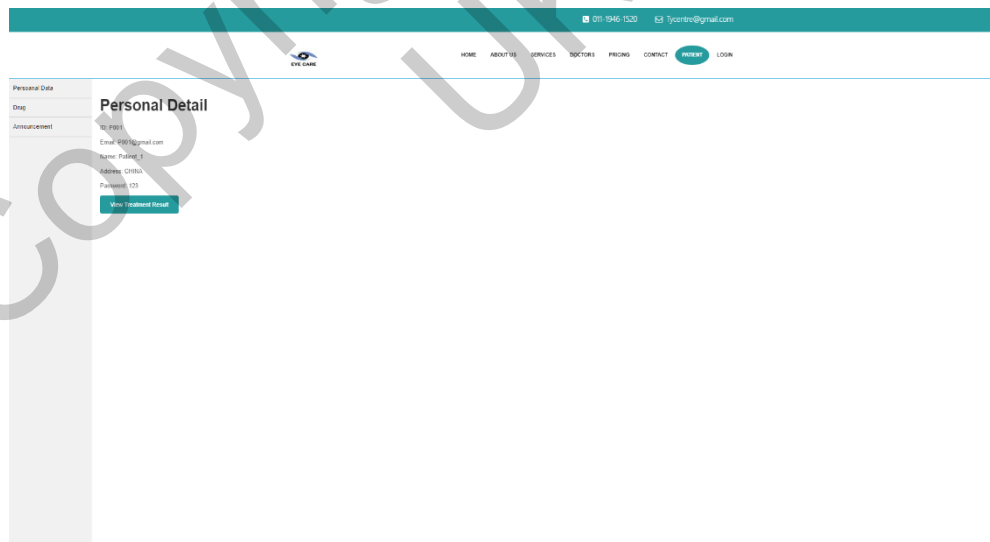
The screenshot shows the 'Personal Detail' page of the 'EYE CARE' website. The header and navigation menu are identical to Figure 3. The sidebar on the left is active, showing 'Personal Data', 'Drug', and 'Announcement'. The main content area is titled 'Personal Detail' and displays the following information: ID: 1017981, Email: tycentro@gmail.com, Name: Patient, Address: CHINA, and Password: 123. A 'View Patient Detail' button is located at the bottom of the information block.

Figure 4 Patient Detail page

Figure 5 shows the page after clicking the View Result button. Logged in patients can view their corresponding results by clicking the detail button.

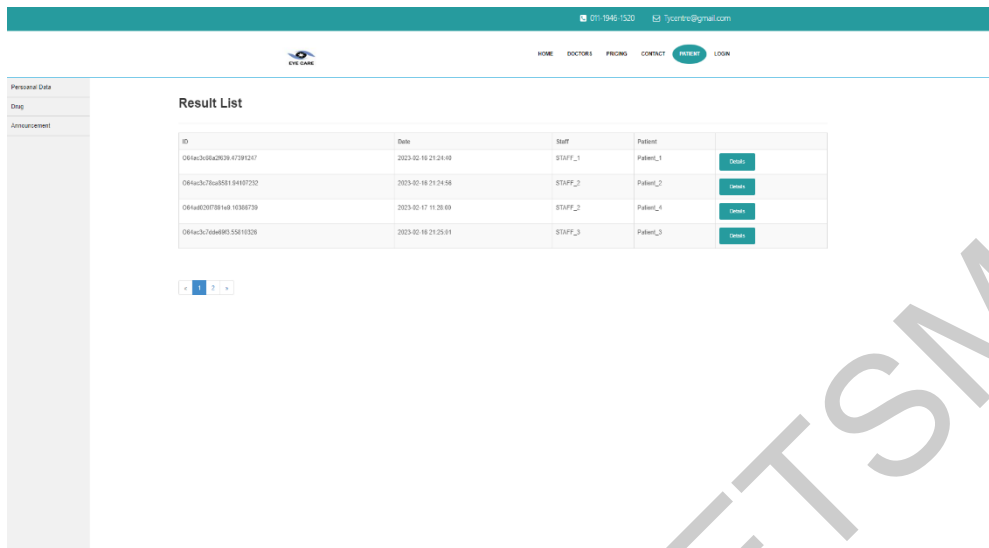


Figure 5 Result List Interface

Figure 6 shows the result details of the patient which is created by medical staff, it includes the name, quantity and total price of the drug required.

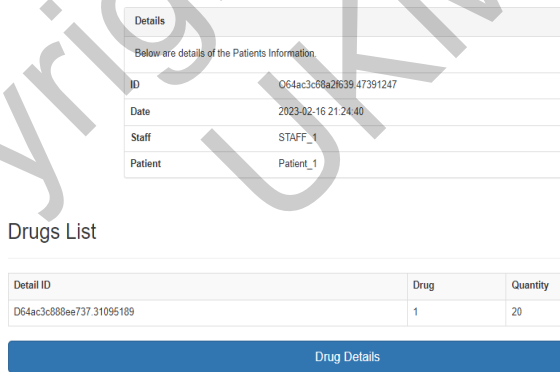


Figure 6 Result Details Interface

Figure 7 shows the invoice, which relates to drug details, the patients can get the invoice use print button.

**INVOICE**  
ID: 064ac3c6a2639-47391247  
Date: 2023-02-16 21:24:40

**EYE CARE**

From: EyeCare Sdn Bhd. To: Patient\_1

SHANGI PROVINCE  
TAYIJIAN CITY  
43800  
XINLIJIAN STREET 001

Address 1  
Address 2  
Postcode City  
State

No	Product	Quantity	Price(RM)/Unit	Total(RM)
1	Aceclidna	20	18	360
Grand Total				360

**Details**

ZHANG KAIJIE  
CN Bank  
Account Number: 1547225896  
IBAN: 1445833958  
Contact: 60119401526

**Contact Details**

Staff: STAFF\_1  
Computer generated invoice.

[Print](#)

Figure 7 Result Invoice Interface

Figure 8 shows the Drugs list page for the patient. All drugs can be viewed through the list or found through the search bar.

011-1946-1520 | Tycentre@gmail.com

HOME ABOUT US SERVICES DOCTORS PRICING CONTACT **PATIENT** LOGIN

**Drugs List**

Show: All entries Search:

ID	Name	Price	Type	Quality Assurance	
1	Acacidna	18	anti-anglogeric ophthalmic agents	1 year	<a href="#">Details</a>
2	Bipotastine	15	miscellaneous ophthalmic agents	2 years	<a href="#">Details</a>
3	Carteolol	25	mydriatics	2 years	<a href="#">Details</a>
4	Alcaftadna	30	ophthalmic anti-infectives	3 years	<a href="#">Details</a>
5	Echothiophate	23	anti-anglogeric ophthalmic agents	2 years	<a href="#">Details</a>
6	Faricimab	25	ophthalmic anti-infectives	2 years	<a href="#">Details</a>
7	Quanothidine	40	ophthalmic anesthetics	3 years	<a href="#">Details</a>
8	Retinol	30	ophthalmic anti-inflammatory agents	2 years	<a href="#">Details</a>
9	Nandrolone	26	anti-anglogeric ophthalmic agents	3 years	<a href="#">Details</a>
10	Methazolamide	25	mydriatics	2 years	<a href="#">Details</a>
11	Latanoprost	18	ophthalmic anti-infectives	1 year	<a href="#">Details</a>
12	Heparin	20	miscellaneous ophthalmic agents	3 years	<a href="#">Details</a>

Figure 8 Drugs List Interface



Figure 9 shows the Announcement page, where patients can view the announcement that exist in the system to get the latest information.

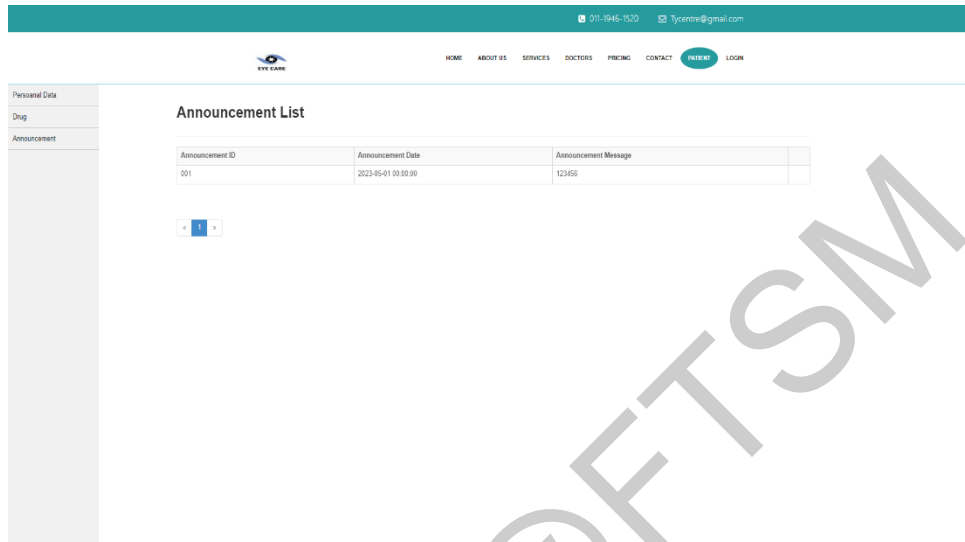
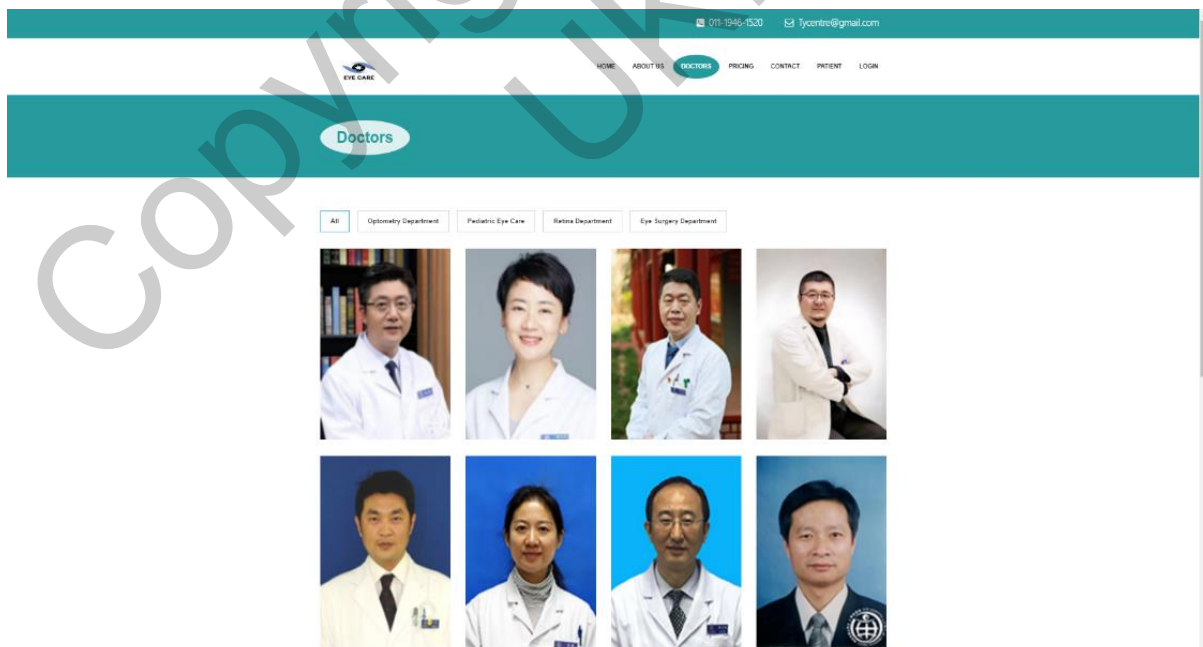


Figure 9 Announcement List Interface

Figure 10 shows the Doctors page. In this page, all the doctors are listed, user can select different departments to correspond to different doctors, user can also click on a doctor's photo to get relevant information.



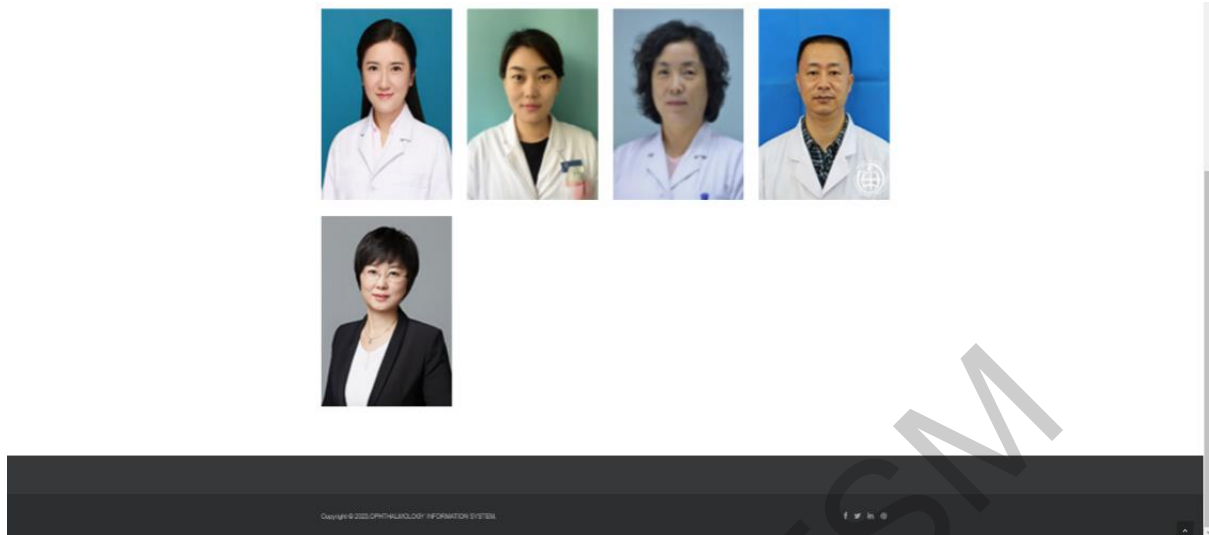


Figure 10 Doctors Interface

## 6 CONCLUSION

Overall, the Taiyuan Central Hospital Eyecare Information System, based on Web technologies, has been successfully developed, albeit with some challenges in relation to online appointment and consultation functionalities. This system is set to aid medical service providers and patients who need a more user-friendly system than currently available options. Despite some drawbacks, we hope that this system can serve as a focus for future research aimed at improving the quality and efficiency of online medical services.

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